

CLAIMS

We claim:

1. A hypermedia content presentation method comprising:
presenting hypermedia content, said hypermedia content containing hyperlinks
to additional hypermedia content;
storing selected ones of said hyperlinks in a delayed viewing list; and,
caching hypermedia content associated with said stored hyperlinks during said
presenting step.
2. The method of claim 1, further comprising reconfiguring said stored hyperlinks to
point to said cached hypermedia content.
3. The method of claim 1, wherein said presenting step comprises displaying Web
content in a Web browser, said Web content containing hyperlinks to additional Web
content.
4. The method of claim 3, wherein said presenting step further comprises playing
back multimedia content in a multimedia content player.
5. The method of claim 1, wherein said presenting step comprises displaying
audiovisual television content combined with hypermedia content in a television set.
6. The method of claim 1, wherein said caching step comprises caching
hypermedia content in a server communicatively linked to said content browser.
7. The method of claim 1, wherein said caching step comprises caching
hypermedia content in a local cache communicatively linked to said content browser.

1 8. The method of claim 1, wherein said caching step comprises:
2 evaluating available system resources; and,
3 based upon said evaluation, caching said further hypermedia content in a proxy
4 cache where downloading said further hypermedia content to a local cache can
5 constrain local resources.

1 9. The method of claim 1, wherein said caching step comprises:
2 evaluating available system resources; and,
3 based upon said evaluation, downloading said hypermedia content associated
4 with said stored hyperlinks to a hypermedia content cache when said system resources
5 are available, and delaying said downloading when said system resources are
6 constrained.

1 10. The method of claim 1, wherein said caching step comprises:
2 configuring a page depth to which said hyperlinks in said hypermedia content
3 associated with said stored hyperlinks can be followed;
4 downloading said hypermedia content associated with said stored hyperlinks,
5 said downloaded hypermedia content containing additional hyperlinks to further
6 hypermedia documents;
7 further downloading said further hypermedia documents, said further hypermedia
8 documents containing further hyperlinks to even further hypermedia documents; and,
9 repeating said further downloading step until reaching said configured page
10 depth.

1 / 11. The method of claim 10, further comprising reconfiguring said stored, further and
2 additional hyperlinks to point to associated hypermedia documents stored in said
3 cache.

1 12. The method of claim 1, wherein said caching step further comprises:
2 establishing a set of folders having an associated topic; and,
3 downloading said hypermedia content to selected ones of said set of folders,
4 each folder in said set containing hypermedia content corresponding to a topic
5 associated with said folder.

1 13. The method of claim 1, further comprising adapting said cached hypermedia
2 content for full text searching in a full text search engine.

1 14. The method of claim 1, wherein said storing step further comprises:
2 associating expiration data with each hyperlink in said delayed viewing list; and,
3 purging hyperlinks from said delayed viewing list based on said expiration data.

1 15. The method of claim 1, further comprising purging selected cached hypermedia
2 content.

1 16. The method of claim 1, further comprising manually managing selected
2 hyperlinks in said delayed viewing list.

1 17. The method of claim 1, further comprising automatically purging selected
2 hyperlinks in said delayed viewing list.

1 18. The method of claim 1, further comprising:
2 selecting hyperlinks in said delayed viewing list; and,
3 presenting cached hypermedia content associated with said selected hyperlinks.

1 19. The method of claim 1, further comprising:
2 selecting hyperlinks in said delayed viewing list; and,

3 adding said selected hyperlinks to a list of bookmarks in a content browser.

1 20. The method of claim 1, further comprising manually managing said cached
2 hypermedia content.

1 21. The method of claim 1, wherein said caching step comprises:
2 determining if a selected hyperlink is associated with hypermedia content having
3 a limited lifetime; and,
4 if it is determined that a selected hyperlink is associated with hypermedia content
5 having a limited lifetime, identifying further hypermedia content necessary for viewing
6 said hypermedia content having a limited lifetime, and downloading said hypermedia
7 content having a limited lifetime and said necessary further hypermedia content.

1 22. A hypermedia content presentation system comprising:
2 a content browser for presenting hypermedia content to a user;
3 a content cache for storing further hypermedia content related to said
4 hypermedia content presented in said content browser;
5 a delayed viewing list for storing hyperlinks to said further hypermedia content in
6 said content cache, said hyperlinks contained in said hypermedia content presented in
7 said content browser; and,
8 a delayed viewing list manager;
9 said delayed viewing list manager downloading said further hypermedia content
10 to said content cache during said presentation of said hypermedia content in said
11 content browser.

12 23. The hypermedia content presentation system of claim 22, wherein said content
13 browser is a Web browser and said hypermedia content is Web content.

1 24. The hypermedia content presentation system of claim 22, wherein said content
2 cache is a local cache associated with said content browser.

1 25. The hypermedia content presentation system of claim 22, wherein said content
2 cache is a proxy cache communicatively linked to said content browser.

1 26. The hypermedia content presentation system of claim 22, wherein said delayed
2 viewing list manager further comprises:

3 a resource sensitive downloading agent;

4 said resource sensitive downloading agent monitoring available system
5 resources;

6 said resource sensitive downloading agent downloading said further hypermedia
7 content to said content cache when system resources are available;

8 said resource sensitive downloading agent delaying said downloading when said
9 system resources are constrained.

1 27. A hypermedia content presentation system configured for operation in a cable
2 system, comprising:

3 a set-top box connecting a television set to the cable system, said set-top box
4 adapted to present through said television set both television content originating in the
5 cable system and hypermedia content originating in data servers in a data
6 communications network;

7 a gateway server for providing an interface between said data communications
8 network and the cable system;

9 a delayed viewing list in said set-top box for storing selected hyperlinks in said
10 hypermedia content to further hypermedia content in said data communications
11 network;

12 at least one cache for storing said further hypermedia content associated with
13 said hyperlinks in said delayed viewing list; and,
14 a delayed viewing list manager for downloading said further hypermedia content
15 during said presentation of said hypermedia content through said television set by said
16 set-top box.

1 28. The hypermedia content presentation system of claim 27, wherein said content
2 cache is a local cache associated with said set-top box.

1 29. The hypermedia content presentation system of claim 27, wherein said content
2 cache is a proxy cache.

1 30. The hypermedia content presentation system of claim 27, wherein said delayed
2 viewing list manager further comprises:

3 a resource sensitive downloading agent;

4 said resource sensitive downloading agent monitoring available system
5 resources;

6 said resource sensitive downloading agent downloading said further hypermedia
7 content to said content cache when system resources are available;

8 said resource sensitive downloading agent delaying said downloading when said
9 system resources are constrained.

1 31. The hypermedia content presentation system of claim 27, wherein said delayed
2 viewing list manager further comprises:

3 a resource sensitive downloading agent;

4 said resource sensitive downloading agent monitoring available system
5 resources;

6 said resource sensitive downloading agent caching said further hypermedia
7 content in a proxy cache where downloading said further hypermedia content to a local
8 cache can constrain local resources.

1 32. A machine readable storage, having stored thereon a computer program having
2 a plurality of code sections for presenting hypermedia content, said code sections
3 executable by a machine for causing the machine to perform the steps of:

4 presenting hypermedia content, said hypermedia content containing hyperlinks
5 to additional hypermedia content;

6 storing selected ones of said hyperlinks in a delayed viewing list; and,

7 caching hypermedia content associated with said stored hyperlinks during said
8 presenting step.

1 33. The machine readable storage of claim 32, further comprising reconfiguring said
2 stored hyperlinks to point to said cached hypermedia content.

1 34. The machine readable storage of claim 32, wherein said presenting step
2 comprises displaying Web content in a Web browser, said Web content containing
3 hyperlinks to additional Web content.

1 35. The machine readable storage of claim 34, wherein said presenting step further
2 comprises playing back multimedia content in a multimedia content player.

1 36. The machine readable storage of claim 32, wherein said presenting step
2 comprises displaying audiovisual television content combined with hypermedia content
3 in a television set.

4 37. The machine readable storage of claim 32, wherein said caching step comprises
 5 caching hypermedia content in a server communicatively linked to said content
 6 browser.

1 38. The machine readable storage of claim 32, wherein said caching step comprises
 2 caching hypermedia content in a local cache communicatively linked to said content
 3 browser.

1 39. The machine readable storage of claim 32, wherein said caching step comprises:
 2 evaluating available system resources; and,
 3 based upon said evaluation, caching said further hypermedia content in a proxy
 4 cache where downloading said further hypermedia content to a local cache can
 5 constrain local resources.

1 40. The machine readable storage of claim 32, wherein said caching step comprises:
 2 evaluating available system resources; and,
 3 based upon said evaluation, downloading said hypermedia content associated
 4 with said stored hyperlinks to a hypermedia content cache when said system resources
 5 are available, and delaying said downloading when said system resources are
 6 constrained.

1 41. The machine readable storage of claim 32, wherein said caching step comprises:
 2 configuring a page depth to which said hyperlinks in said hypermedia content
 3 associated with said stored hyperlinks can be followed;
 4 downloading said hypermedia content associated with said stored hyperlinks,
 5 said downloaded hypermedia content containing additional hyperlinks to further
 6 hypermedia documents;

7 further downloading said further hypermedia documents, said further hypermedia
8 documents containing further hyperlinks to even further hypermedia documents; and,
9 repeating said further downloading step until reaching said configured page
10 depth.

1 42. The machine readable storage of claim 41, further comprising reconfiguring said
2 stored, further and additional hyperlinks to point to associated hypermedia documents
3 stored in said cache.

1 43. The machine readable storage of claim 32, wherein said caching step further
2 comprises:

3 establishing a set of folders having an associated topic; and,
4 downloading said hypermedia content to selected ones of said set of folders,
5 each folder in said set containing hypermedia content corresponding to a topic
6 associated with said folder.

1 44. The machine readable storage of claim 32, further comprising adapting said
2 cached hypermedia content for full text searching in a full text search engine.

1 45. The machine readable storage of claim 32, wherein said storing step further
2 comprises:

3 associating expiration data with each hyperlink in said delayed viewing list; and,
4 purging hyperlinks from said delayed viewing list based on said expiration data.

1 46. The machine readable storage of claim 32, further comprising purging selected
2 cached hypermedia content.

1 47. The machine readable storage of claim 32, further comprising manually
2 managing selected hyperlinks in said delayed viewing list.

1 48. The machine readable storage of claim 32, further comprising automatically
2 purging selected hyperlinks in said delayed viewing list.

1 49. The machine readable storage of claim 32, further comprising:
2 selecting hyperlinks in said delayed viewing list; and,
3 presenting cached hypermedia content associated with said selected hyperlinks.

1 50. The machine readable storage of claim 32, further comprising:
2 selecting hyperlinks in said delayed viewing list; and,
3 adding said selected hyperlinks to a list of bookmarks in a content browser.

1 51. The machine readable storage of claim 32, further comprising manually
2 managing said cached hypermedia content.

1 52. The machine readable storage of claim 32, wherein said caching step comprises:
2 determining if a selected hyperlink is associated with hypermedia content having
3 a limited lifetime; and,

4 if it is determined that a selected hyperlink is associated with hypermedia content
5 having a limited lifetime, identifying further hypermedia content necessary for viewing
6 said hypermedia content having a limited lifetime, and downloading said hypermedia
7 content having a limited lifetime and said necessary further hypermedia content.

1 53. A method for providing fee-based content caching comprising:
2 receiving requests from an end user to store in a delayed viewing list (DVL)
3 selected ones of hyperlinks contained in hypermedia content presented in a client-side
4 content browser;
5 responsive to said end user requests, storing said selected hyperlinks in said
6 DVL and notifying a third-party content caching system;
7 responsive to said notification, caching in said third-party content caching system
8 further hypermedia content associated with said stored hyperlinks, said caching
9 occurring during said presentation of said hypermedia content in said client-side content
10 browser; and,
11 charging said end-user a fee for said content caching.

1 54. The method of claim 53, further comprising:
2 transmitting to said end user for presentation in said client-side content browser,
3 selected ones of said cached hypermedia content.

1 55. The method of claim 53, wherein said fee is based upon how many bytes of data
2 are included in said cached hypermedia content.

1 56. The method of claim 53, wherein said fee is based upon how many times said
2 end user caches hypermedia content.

1 57. The method of claim 53, wherein said hypermedia content is Web content.

1 58. The method of claim 57, wherein said fee is based upon how many Web pages
2 are cached in said third party content caching system.